

Coal Resource Report to the Utah State Legislature

The Utah Coal Resource Advisory Committee has produced a map showing where Utah's coal resources and currently economic reserves are located. On this map, the total extent of the coal-bearing rocks is shown in grey, and this essentially defines the various basins in Utah where coal is found. Locally within these basins coal beds of sufficient thickness (>4 feet thick) and with shallow enough cover (<3000 feet) can be defined, and these areas of thicker, shallower coal have been noted on the map as the red, blue, and green areas within the grey basins.

Five of the grey basins in Utah are devoid of thick or shallow coal deposits, and these areas are not attractive for mining. These areas include the Goose Creek and Grouse Creek coalfields of Box Elder County, the Lost Creek coalfield of Morgan County, the La Sal coalfield of Grand and San Juan counties, and the Harmony coalfield of Iron and Washington counties.

Three areas in the state have seen significant coal mining development in the past 100 years and are currently being mined at present. These important coal-bearing areas are the Book Cliffs, Emery, and Wasatch Plateau coalfields of Carbon, Emery, Sanpete, and Sevier counties. Mining in these three fields has extracted over 920 million tons of coal through 2004 (elsewhere in the state only slightly more than 10 million tons of coal has been extracted. Because these three fields have been the focus of industry attention, much is known of their coal resources, and, in fact, much of the coal can be so well delineated as to be classified as coal "reserves," or deposits that can be economically extracted under current market conditions.

The 921 million tons of coal mined in central Utah through 2004 comes from a fairly well understood minable reserve base of 2348 million tons, so about 39 percent of the reserve base has been depleted. The reserve base reported in this study is more conservative than some others reported in that we only look at coalbeds that are at least 6 feet thick and under less than 2500 feet of cover. Other reports use a 4-foot minimum coalbed thickness, and look to depths of 3000 feet, but such thin and deep coal is not typically mined in Utah under current market conditions.

Current publicly traded mining operations list on their books, coal reserves of about 380 million tons, or a 15-year reserve base, which would be the minimum remaining life of the coal in central Utah. Assuming a constant future mining rate of 25 million tons per year, the estimated 1427 million tons of remaining coal in the three central Utah coal areas could last about 55 years, or until 2060. It should be noted that more than 100 years of mining has extracted much of the easiest to mine and best quality coal from central Utah; the remaining reserves will tend to be deeper and slightly poorer quality, and thus more expensive to extract, than the coal extracted to date. Thus, when the reserves of minable coal start to run out in about 50 years, **if Utah wishes to sustain**

a coal mining industry and use coal-fired electric power generation, the State and the coal industry will have to look to other coal areas in the state for minable coal.

Six significant blue-colored coal areas are noted on the coal resource map of Utah included in this report; these are the areas the Utah Coal Resource Advisory Committee believes Utah's coal industry will have to look for life beyond 2060. These six areas, which hold the future of Utah's coal industry, are the Alton, Kaiparowits Plateau, Kolob, Henry Mountains, Salina Canyon, and Sego coalfields. To date, limited exploration and mining has occurred in these areas, and thus the most of the coal in these areas are classified as resources, and cannot be considered well enough defined to be classified as economically recoverable reserves. Other than one attempt to open a new coal mine in the Kaiparowits Plateau coalfield in the 1990s (an area now off limits to development because of the creation of a national monument), most of the exploration and resource delineation in these areas dates back to the last U.S. energy crisis of the 1970s and 1980s. Although these areas are somewhat remote from current markets, the availability of shallow, thick coal in these fields can make the cost to mine coal in these fields low enough to offset the transportation cost disadvantage created by their remoteness.

Therefore it is not unreasonable in the next 50 years for some companies to look to these six blue areas for potential coal supply as the red deposits of central Utah become more depleted. A current example of this sort of effort is occurring in the Alton coalfield. The coal thickness, coal quality, and the undisturbed nature of the large coal resources in the six blue areas makes them logical targets for future exploration and development efforts from a coal industry seeking to meet the energy needs of a modern technological society.

Coal production and consumption remained fairly low until several late 1970s and early 1980s when several large coal-fired electric generation plants were built in Utah. From 1870 through 1981, 416.7 millions tons of coal were mined in Utah, or an average rate of 3.8 million tons per year over the 111 year period. However, in the 22 years from 1982 through 2004, another 490.1 million tons of coal have been mined, or an average rate of 22.3 million tons per year over that period. Thus, Utah coal resources are being depleted at a much more rapid rate than in the past.